

DOCUMENT RESUME

ED 174 620

SP 014 624

AUTHOR Shalaway, Linda; And Others
TITLE Teachers Attaining New Roles in Research: A Challenge to the Education Community. Conference Series No. 4.
INSTITUTION Michigan State Univ., East Lansing. Inst. for Research on Teaching.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
PUB DATE Oct 78
CONTRACT 400-76-0073
NOTE 52p.; Conference on Michigan State University's Institute for Research on Teaching (East Lansing, Michigan, February 10, 1978)
AVAILABLE FROM Institute for Research on Teaching, College of Education, Michigan State University, 252 Erickson Hall, East Lansing MI 48824 (\$3.50)
EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Educational Policy; *Educational Research; Information Dissemination; Noninstructional Responsibility; *Program Design; Program Development; Public School Teachers; *Teacher Participation; *Teacher Role

ABSTRACT

The Michigan State University Institute for Research on Teaching, an aggregate of public school teachers and full-time investigative personnel, came under review by a one-day conference of teachers, teacher organization representatives, educational researchers, and state and federal government officials. Discussion topics that arose from the Institute's operations and that were debated were primarily concerned with the currently abbreviated role the inservice teacher plays in educational research and policy-making. It was the consensus of the conference that teachers be utilized as research investigators. The exact duration and nature of this noninstructional role, and a design for the implementation of a large-scale collaborative system involving teachers and researchers, were included in the conference proceedings. The importance of teacher inclusion in decision-making processes was also discussed. The report of the conference includes six bibliographic references, a list of available documents relevant to the discussed issues, and a listing of the invited participants in the February 1978 conference. (LB)

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Conference Series No. 4

TEACHERS ATTAINING NEW ROLES IN RESEARCH:
A CHALLENGE
TO THE EDUCATION COMMUNITY

Linda Shalaway and Judith Lanier

With Carolyn Lowman, Lucy Knappen,
Charlette Kennedy, and Jack Gajewski

Published By

The Institute for Research on Teaching
252 Erickson Hall
Michigan State University
East Lansing, Michigan 48824

October 1978

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The work reported herein is sponsored by the Institute for Research on Teaching, College of Education, Michigan State University. The Institute for Research on Teaching is funded primarily by the Teaching Division of the National Institute of Education, United States Department of Health, Education, and Welfare. The opinions expressed in this publication do not necessarily reflect the position, policy, or endorsement of the National Institute of Education. (Contract No. 400-76-0073)

INSTITUTE FOR RESEARCH ON TEACHING

Teachers' thoughts and decisions are the focus of studies currently under way at Michigan State University's Institute for Research on Teaching (IRT). The IRT, founded in April 1976 with a \$3.6 million grant from the National Institute of Education, has major projects investigating teacher decision-making, including studies of reading diagnosis and remediation, classroom management strategies, instruction in the areas of language arts, reading, and mathematics, teacher education, teacher planning, effects of external pressures on teachers' decision, and teachers' perceptions of student affect. Researchers from many different disciplines cooperate in IRT research. In addition, public school teachers work at IRT as half-time collaborators in research, helping to design and plan studies, collect data, and analyze results. The Institute publishes research reports, conference proceedings, occasional papers, and a free quarterly newsletter for practitioners. For more information or to be placed on the IRT mailing list please write to: The IRT Editor, 252 Erickson, MSU, East Lansing, Michigan 48824.

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Preface

The practice of establishing and maintaining close working relationships with professional personnel in public schools was a tradition at Michigan State University, especially as it related to planning and operating programs of instruction.

The potential benefits of teachers' active participation in educational research programs thus appeared obvious in MSU's initial conception and planning of the Institute for Research on Teaching. When NIE awarded the contract for the Institute to MSU in 1976 and formal operations began, teachers from local schools were hired to collaborate in planning, conducting, and analyzing the studies of teaching. This collaboration, while undoubtedly beneficial during the first two years, was not systematically or rigorously reviewed. One means of assessing our early actions and recommending policy for future collaborative work was to arrange a conference of representatives of each major group within the educational community for critical review.

A conference dedicated to this purpose was held February 10, 1978 at Michigan State University. It included public school teachers (current and former IRT collaborators), representatives from the teacher organizations, school administrators, teacher educators, educational researchers, and representatives from the state and federal government.*

It is our contention that these groups should share responsibility in facilitating the collaborative process and setting policy for future teacher collaboration in research.

* See the list of conference participants appended to this paper.

The following paper -- itself the result of a collaborative effort -- is based on one entire day of conference deliberations. The ideas expressed throughout the day were recorded by audio tapes and are reproduced here in a synthesized form. Though the discussions were based on the Institute for Research on Teaching as a model, they appear applicable to other contexts in which teachers and researchers form partnerships in research.

Teachers Attaining New Roles in Research:
A Challenge to the Education Community

Linda Shalaway and Judith Lanier,
With Carolyn Lowman, Lucy Knappen, Charlette Kennedy, and Jack Gajewski¹

Practicing teachers, teacher educators, and administrators comprise the bulk of the educational community, but they have had little input into educational research. Typically, practitioners are on the receiving end of research, where they are expected to adopt and implement findings. Members of the educational community have increasingly come to realize that research should no longer ignore the insights and wisdom of the practitioner. As David Hawkins (1966) observed, "The best practice exceeds the best theory in quite essential ways" (p. 3). Practitioner wisdom has not been systematically documented or recorded, however, and has to be reconstructed with each generation of professionals. When practitioners collaborate in research, this wasteful repetition can be avoided. With the help of experienced practitioners, researchers can build upon the knowledge already acquired, documenting this wisdom for other practitioners and separating those aspects that bear fruit from those that do not. As research collaborators, practitioners can help to produce research that is more applicable in the world of professional practice.

The exclusion of practitioners from research is a relatively recent phenomenon. In the 1920s and 30s, many educational researchers were teachers and administrators (Chall, 1975). In the following decades, as methods became more complex and specialized, research became a divided, one-way operation -- researchers produced and practitioners consumed. Consequently, much of the knowledge produced remained unused, judged as lacking practicality

¹ Linda Shalaway is the IRT editor. Judith Lanier is associate director of IRT, associate dean for program development in the College of Education, and professor of curriculum and instruction. Carolyn Lowman, Lucy Knappen, Charlette Kennedy, and Jack Gajewski are public school teachers and IRT co-investigators.

and being inconsistent with classroom realities. Practitioners have come to mistrust and sometimes develop intolerant attitudes toward research and researchers. Through practitioner-researcher cooperation and collaboration, this situation might be corrected and research made more effective when the focus of the inquiry is a field of professional practice.

"Teacher involvement," for example, is a notion currently in vogue and frequently called for, but there is an important distinction between involvement and collaboration. More often than not teacher "involvement" is a token effort to win teacher support. At the IRT, teacher involvement was viewed as a serious commitment -- an opportunity for practitioners to make significant contributions to the research itself. So in 1975, when the National Institute of Education called for research on teaching proposals, the designers of the MSU Institute proposal suggested that practicing teachers be hired to collaborate in the research.

During the Institute's planning period, teachers comprised 30% of the senior research staff. These teachers (seven in all) collaborated as co-investigators in planning and designing studies. The number of teachers collaborating as senior staff members decreased to 15% during the operational years, as teachers were recruited to fill other roles in the research (e.g., as subjects and members of policy boards). Thus teachers participate in various roles of IRT research -- as subjects, policy makers, data collectors, and more.

The purpose of this paper is not to argue for the necessity of teacher collaboration in applied educational research. Rather, we are attempting to step back after two years of teacher collaboration at IRT and review the collaborative process as we have seen it, systematically describe and discuss the various roles of teacher participation in research, examine the payoffs, problems, and potential difficulties of each role, and recommend

policies for encouraging and facilitating future collaborative efforts at all levels. As the benefits of collaboration are clear to those involved, we want to share with others what we have learned. This paper is presented as a discussion of our trial and error efforts, so that others can learn from our mistakes and successes and build upon our experience.

Collaboration, for purposes of this discussion, is divided into four general levels: (1) teachers working as co-investigators on the research staff, (2) teachers participating as research subjects, (3) teachers involved as research policy makers, and (4) teachers sharing in research application and dissemination. Each role requires unique experiences and abilities, though there can be overlap in these roles; that is, qualified individuals can find themselves participating in two or more roles. Collaboration is a continuing, and somewhat cyclic process; it moves from teachers sharing in the identification of researchable problems to participating as subjects and policy makers, then testing the findings in their classrooms and suggesting improvements for further research. Each of the four roles will be discussed individually even though it is sometimes difficult to determine where the responsibility for one role leaves off and that of another begins.

I. Teachers Collaborating as Research Investigators

Teachers, as they observe and interact with their students each day, develop and test hypotheses about instruction and learning; they are a natural source for research. But the kind of knowledge and information collected by teachers has had few outlets. Practitioners do not maintain data banks of successful practices or articulate theories of teaching; they have neither the time nor the opportunity to systematically document the information they gather. Collaborating as research investigators, however, teachers are able to use the knowledge and experience they have acquired

in identifying important research problems, collecting data, and interpreting the findings. Their knowledge of classrooms and school subtleties and complexities enriches the options for decision making.

Teachers in the role of co-investigator share the same social and intellectual milieu as the other senior researchers at the Institute. They have ready access to the deliberations, literature, consultants, and range of expertise that is represented in the full Institute staff. With their on-site location, they can participate more readily in identification of research questions and problems, reviews of relevant literature, design of instruments and methods, data collection, and interpretation of results.² This co-investigator role is the role that has been most emphasized at IRT during its first two years of existence. It is also the role that will be reviewed and discussed here most thoroughly.

IRT's Classroom Strategy Study is just one example of a study that not only involves teachers as co-investigators, but exists primarily because of the teachers. In deliberations that occurred at IRT during the planning stages of research, a concern expressed most frequently by the seven collaborating teachers³ was the question of how teachers could deal more effectively with "problem children" in their classrooms -- children whose behavior consumed an unusual amount of the teacher's time, emotional energy, and attention. With the strong recommendation of the teachers, this concern became the basis for a major research project. Now that the project has entered its data collection phase, the teacher associated with this

²A discussion of the teacher co-investigator duties and responsibilities can be found in Kennedy, C. Teachers and researchers: Toward a proper division of labor (Occ. Paper No. 2). East Lansing, Michigan: Institute for Research on Teaching, Michigan State University, 1977.

³"Teacher collaborator" is a term used loosely at IRT to refer to those teachers collaborating as co-investigators.

particular project is helping to interview other teachers regarding their classroom strategies. She also conducts classroom observations, collects data, as do the other research staff.

Sustaining effective collaboration between teachers and researchers requires policies regarding the extent of teacher participation and the selection, retention, and training of teacher collaborators. In the initial phase it also requires researcher training in how they might work together more effectively. Following are some questions we have come to consider important in planning and conducting collaborative research.

What is the Nature or Extent of the Co-Investigator Role?

As co-investigators, teachers should participate in most phases of the research process. Obviously, the nature of the role will change as the research progresses, but we believe the teacher perspective is needed in all stages of a research project, no matter how that perspective is used.

One of the most crucial points for collaboration is the beginning of a study, when the research is first conceptualized. In identifying and articulating their problems and concerns, teachers can help identify knowledge that is needed in professional practice. One of the frequent complaints teachers have about educational research is that it lacks relevance to teachers and teaching. Researchers, on the other hand, frequently find that teachers' ideas are too broad to be researchable. Neither group works most effectively in isolation. Here, through collaboration, educators can capitalize on two necessary, but different views. Effective collaboration can result in the synthesis of the teacher's broad, practical approach to viewing the classroom and the researcher's analytic, narrowing approach. Thus, through collaboration, research problems can be identified that are

of interest to the researchers but also important to practitioners.⁴

In the IRT's Language Arts Project, teachers wanted to know how they might make better judgments about the assignment of more "meaningful" language arts activities for learners, and how they might be integrated with other subjects to increase the amount of time given to reading, writing, and speaking. This concern was translated by researchers into several studies investigating integration and meaningfulness in language arts teaching.

After the problem identification stage, the co-investigator role changes in emphasis as the researcher perspective and expertise becomes more dominant. In the more technical phases of research design, the researcher describes what is scientifically necessary while the teacher investigator describes what is practically necessary. In all stages, it seems appropriate to match teacher interest with a project's needs. This way, it is possible to capitalize on the unique abilities and interests of individual teachers. Teachers, like other professionals, differ in their expertise, abilities, and interests.

Another important issue in considering the nature of the co-investigator is increased teacher responsibility. With increased teacher participation in professional endeavors comes increased responsibility (Lortie, 1975). An increased responsibility means that teachers will share with researchers both the credit and criticism of the research. If teachers are heavily involved as co-investigators, for example, they should be listed as study co-authors and held as accountable as researchers. Teacher co-investigators cannot be responsible for representing all teachers any more than individual

⁴ A model for collaboration developed by the Far West Laboratory for Educational Research and Development (San Francisco) calls for research to be school specific. At the request of a certain school, researchers come to the school to talk with teachers and determine their researchable problems and concerns. The research then proceeds, focused upon the problems identified by the teachers.

researchers can represent researchers in general, but there are some basic responsibilities that have to be realized.

First, teachers have the responsibility for clarifying their positions, articulating these to researchers, and making sure their ideas and contributions are seriously considered. Teachers also have to share responsibility in disseminating the findings of research, as well as communicating to other teachers the professional opportunities afforded through collaboration. Policy should not mandate levels of responsibility for teachers or researchers, but it should encourage and facilitate the development of personal accountability.

How Many Teacher Co-Investigators are Needed?

Ideally, each study conducted should employ the expertise of at least one teacher. If not as a co-investigator, then as continuing consultant. During its first year, the IRT had at least one teacher associated with every one of its eight projects; assignments were quarter-time in some cases, allowing teachers to participate in two projects. This representation was not possible in the second year, as it became necessary to increase the number of teacher collaborators in other roles (subjects, policy makers).

If and when collaboration becomes a regular part of the teaching job (and we feel it should be), it might become practical to have a much closer ratio between the number of teachers and the number of researchers working on a study, at least during some phases of the research. IRT's teacher collaborators argue convincingly that the total effort is greater than the sum of the parts; teachers working collectively in collaboration often produce more than those working individually. This was certainly evidenced during the planning stages of IRT research, when all seven teachers sat down together with the co-directors to formulate research questions.

By working together as peers, collectively articulating their concerns, the teachers were able to identify several major teacher concerns. Their concerns were then translated into major research questions. Perhaps it would be productive to enlist the aid of a greater number of collaborators in some stages of the research than in others, such as at the time research questions and problems are generated.

What Personal Qualities Should Co-Investigators Possess?

A teacher must have certain individual characteristics and abilities to be able to make a significant impact on a research team. On a general level, co-investigators must be able to analyze and articulate their experiences in the classroom, helping researchers understand the practitioner role. Secondly, the role demands an individual who is secure enough to make others clarify and explain unfamiliar terms and vocabulary. Also, teacher co-investigators must be assertive enough to make their ideas known and see that those ideas are considered carefully by the rest of the research team; they cannot be easily intimidated by research staff.

Other personal traits are important as well. The effective co-investigator, based on IRT experience, is one who can appreciate both the teaching and research worlds, with equal respect. This ability is important for collaborating researchers as well. The collaborator must also be able to translate and mediate between the two worlds.

Teacher interest is also recognized as a vital factor in the co-investigator role. At the IRT, qualifications in a certain content area are generally secondary to a teacher's individual qualities and interest in collaboration. Candidates for co-investigation should be interested in research and collaborative means for improving teaching and education. Their interests should then be directed toward certain studies or areas of inquiry. Again, a match between teacher interest and project needs is

usually the most profitable and effective form of collaboration. If the research is under way, the obvious way to achieve this match is to provide candidates with information about the content of the research (e.g., classroom management or language arts). In addition, candidates should be informed as to the nature and responsibilities of the role they seek to procure.

In addition to the general qualities and criteria we've discussed, the IRT teacher collaborators developed a list of specific selection criteria during the spring of 1978. That list follows, in abbreviated form. Teacher co-investigators should possess:

1. Master of arts degree, or equivalent coursework/experience.
2. Clearly-stated interest in IRT research activities (i.e., research on teaching).
3. A statement of personal motivation, expectations, and objectives regarding participation as a co-investigator.
4. Communication skills (oral and written) as evidenced in peer and supervisor recommendations and in participation in team teaching, curriculum development projects, etc.
5. Professional involvement beyond the classroom, i.e., participation on/leadership in school or system-wide committees, projects, activities.
6. Positive characterization of classroom experience and of teaching as a professional practice.
7. Some research experience (as subject, collaborator, in coursework, etc.) is *desirable*.
8. Relationship of short-and/or long-term goals to IRT experience.

Added to this list are two criteria originally stated by IRT administrators. A co-investigator must be:

9. A tenured teacher.
10. From a cooperating school district that agrees to retain the teacher on tenure while a portion of contract time is purchased by the Institute.

How Should Co-Investigators Be Selected?⁵

The procedures for selecting teacher collaborators are less obvious than the qualities and characteristics to look for in selection. During its initial selection of co-investigators, IRT contacted the Michigan Education Association representatives of all schools within a 20-mile radius of Michigan State University. Also contacted were representatives of the Detroit Federation of Teachers. These representatives posted an announcement in the mailbox of every elementary teacher in the area. Some 30 applications were received, and choices were narrowed and screened to 14. These 14 teachers were then interviewed, and seven were selected according to the criteria listed.

Selection of teacher collaborators the second year was facilitated by contacts made during research. Several teachers who had previously participated as research subjects expressed an interest in becoming involved as co-investigators. In addition, two teachers selected during the first year continued their involvement into the second year.

In IRT's experience, then, the selection process has been based on teachers volunteering to collaborate. But the search for and selection of teacher co-investigators might also be a cooperative task undertaken by teacher organizations and school districts. Through the active participation of districts and professional organizations, teachers could be informed of collaborative opportunities and the potential value to them of the collaborative activity.⁶ However, personal initiative -- that trait so important to

⁵ While discussed in the Co-investigator Section, our discussion and comments on selection procedures apply equally well to the other three collaborative roles.

⁶ The active participation of school districts and teacher organizations in identifying and/or informing potential candidates could and *should* apply to all collaborative roles, not just co-investigation.

professional involvement of any kind -- will always be the most crucial factor in securing teacher participation. Unions and districts should encourage that initiative wherever possible.

Perhaps the search for teacher collaborators could be facilitated by teacher centers. Teacher centers could be the contact between teachers interested in research and research centers interested in hiring collaborators. As will be discussed later, teacher centers could function not only as selection centers for collaborators, but also as training and dissemination centers.

The selection process might also include the creation of new roles or responsibilities within schools that co-investigators could undertake when returning full-time to the district. For example, a school district might decide to create a resident researcher position; a teacher within that school system could train for that position by collaborating as a research investigator. The district could identify five or 10 likely candidates and refer them to researchers seeking collaborators.

Whatever the process, selection of teacher collaborators must include *a formal contracting of the teacher's services*. Included in such a contract would be the length of collaboration, the expected expiration date of the collaborative relationship, compensation that can be expected, and any obligations on the part of both teacher and researcher. A contract should not only clarify the collaborative relationship and prevent misunderstandings, it should also aid in securing the cooperation of school districts and teacher organizations.

What Preparation is Necessary?

As we mentioned previously, some of the necessary qualities for co-investigation (e.g., assertiveness, communication skills) can be selected

for. Other skills and abilities must be cultivated, for both teachers and researchers. Encouraging diverse members of the practice and research communities to work together is not an easy task. At IRT, seminars on interdisciplinary transaction were conducted so that both teachers and researchers from diverse disciplines could learn to listen and understand each other's language and the special concerns and approaches each brings with him/her. These seminars helped collaborating teachers and researchers understand each others' roles and responsibilities and provided a directed forum for communication.⁷ An ongoing training experience in the form of special seminars could insure that communication lines remain open between teachers and researchers.

Collaboration should not change an individual's orientation, but rather increase one's sensitivity and appreciation of others' orientation. Co-investigation as currently practiced at the IRT involves teachers leaving their school setting to come to work at the Institute (located at the University), learning a new vocabulary, and meeting new people. To combat the isolation teachers feel when entering a new environment, IRT teams new co-investigators with those who have been collaborating at least a year. These "veterans" assist the newcomers in adjusting to the different climate and responsibilities and answer questions they naturally have. In addition, the teachers have begun holding small, informal meetings, inviting researchers, interns, and others to join them. In future endeavors, more of an effort must be made to acquire from researchers the same kind of socialization and sensitivity toward teaching as is expected from the teachers toward research.

⁷ Lack of communication is perhaps the greatest hindrance to effective collaboration, according to an IRT study of teacher-researcher interaction conducted by teacher collaborator Charlette Kennedy (in progress). In examining the collaborative experiences of teachers from Michigan, New Jersey, and California, Kennedy noted that those teachers reporting unsatisfying experiences had not been able to express their concerns and opinions in a way

Technical training for co-investigation should be mostly project specific. On a general level, teachers could be introduced to research by attending university classes, special meetings, and seminars conducted at the research center. A training program that includes an appropriate number of classes and orientation activities is currently being developed by IRT's collaborating teachers.

We would stress again that the objective in co-investigation is not to turn teachers into social scientists or educational researchers, but to incorporate *both* teacher and researcher perspective and expertise in research. It would be an unnecessary duplication of efforts to have teachers and researchers developing the same expertise and completing the same tasks. By working together within their own areas of expertise, each can bring a unique contribution to the research effort. Through their participation, however, teacher co-investigators will have opportunities to become familiar with some technical aspects of research. Research technique is no mystery or secret, and while it is unnecessary for teachers to master all such techniques, they can determine where a procedure might fail from a practical standpoint though the researcher frequently cannot.

How Long Should Teachers Participate as Co-Investigators?

Perhaps the teacher's greatest responsibility as a research co-investigator is to ask questions and provide a reality check, making sure that researchers can justify studies, methods, and procedures. By becoming too familiar with the research process, however, teachers might have difficulty performing this important task. It is a fine line that teachers must walk between understanding the research and questioning its value from a practical perspective. We must therefore consider this question: "How long can a teacher participate as a co-investigator before his/her practical perspective

is subsumed by an intimacy with the research?"

Based upon our experiences thus far, we believe that teachers should be prepared to make a minimum commitment of two years as co-investigators. IRT policy as it was recently revised by teacher collaborators states that co-investigators should be encouraged to participate in a research project for two years, or until a natural break occurs in the project.

Co-investigators' contracts are issued on a yearly basis, with option for renewal. Obviously, continuing relationships between teachers and researchers should be worked out individually. Any extensions outside of predetermined policy, however, should be thoroughly examined and justified. On one hand, teacher commitment, continuing interest, and familiarity with a study are obviously important. It may be equally important (both for the research and for the teaching profession), though, to give many teachers a chance at co-investigation, rather than retain one or two for an extended period of time.

Of seven teacher collaborators during IRT's first year, two remained co-investigators a second year. IRT is now entering its third year of operations. One teacher will continue as a co-investigator for a third year because the project with which she is involved will not reach a natural break until 1979 and she wishes to continue her participation. Another teacher hired last year will continue on for a second year. In addition, two new teachers have joined the staff.

Regardless of how long they have been co-investigators, however, the teachers at IRT all continue to teach in their schools. The practice of hiring co-investigators half-time while stipulating that they continue to teach half-time is IRT's approach to the "potential loss of perspective" problem. Presumably, teachers who retain close classroom ties will never lose that unique teacher perspective. IRT's co-investigators report that

teachers removed from the classroom as little as a week lose the sense of urgency and "reality," and they strongly recommend that all collaborators retain a classroom commitment.

While we generally agree that continued ties with the classroom are desirable during co-investigation (or any collaborative role), we must also realize the strain placed on teachers by this half-time arrangement. Two half-time commitments more often than not become two full-time commitments. This problem might be resolved in several ways. The Institute, for example, has hired among others a kindergarten teacher and a music teacher as co-investigators -- individuals whose teaching day could easily be divided into half segments.

Hiring a teacher full-time for one year would be another approach. Leaving the classroom for one year would probably not result in too great a loss of teaching perspective and would allow the teacher to devote his or her full-time energies into collaboration.

Another solution is to make collaboration a part of the regular teaching responsibilities. In some kind of team teaching arrangement, for example, two teachers could share teaching and collaboration responsibilities.⁸ There are certainly enough teachers available to insure that those interested in research could be given release time for co-investigation (or any collaborative role). Thus collaboration is a productive way to handle the current surplus of teachers. Making collaboration a part of the job would also assure the support and cooperation of school districts and teacher organizations.

Still another possibility is for teachers to participate on their own time -- with the same financial compensation, of course. The obvious argu-

ment against this suggestion is that full-time teaching responsibilities do not allow much time for outside activities as involved as research collaboration. Too, it places the collaborative role in a position above and beyond the call of duty, requiring from teachers a super human effort.

What's in it for Teachers?⁹

Financial compensation for collaborating teachers is one issue upon which there is little disagreement. Teachers should be financially remunerated for their participation in research. Teacher co-investigators at IRT receive their regular salaries because the Institute buys half their time from their school districts.

The larger issue of compensation is not so much a question of money, however, as of personal and professional growth. Teachers, school districts, teacher organizations, and others have to be convinced that co-investigation not only benefits the outcomes of research, but it directly benefits teachers and teaching. Collaboration in research is first and foremost a chance for the serious teacher to reflect and think about what s/he does in the classroom. Many teachers have an *internal data base* for successful practices but are rarely called upon to share it. Once they engage in co-investigation this knowledge "pours forth," in the words of one teacher. Co-investigator roles serve to increase teacher insights, enhance classroom effectiveness, and reduce isolation of teachers from other members of the education community.

Compensation must also come in the form of increased opportunities and outlets for the professional development and knowledge gained as a result of the experience. Teachers have to be assured that the professional growth they have sought to achieve is not terminated at the end of collaborative experience, but, rather, continues in new and expanding roles. Several continuing opportunities for teacher co-investigators are discussed below.

⁹ This discussion could apply to all four collaborative roles. The issue of compensation is addressed again, however, in the Subject Section, where compensation takes on a slightly different meaning.

Where Does the Teacher Go From Here?

After an experience as co-investigator, where do teachers take the skills and abilities they have developed? Do they return to the classroom full-time? Try to continue collaboration in some other context? Leave teaching and pursue a research career? This decision, while obviously a personal one, could be facilitated by the institute or research center where the teacher was employed.

As a first step, the research center should engage in discussions and "counseling" with the teacher about six months prior to the scheduled conclusion of the collaboration. With representatives of the research center, the teacher could explore such possibilities as continuing the co-investigative role (maybe in some other context), returning to the classroom full time, pursuing an advanced degree, or undertaking new responsibilities in special school positions created for teachers with research experience. The institute might also contact teacher organizations or governmental agencies and departments to determine whether the co-investigative skills the teacher has acquired could be used in disseminating knowledge and information to others. No matter what the teacher decides to do, we believe that the institute is ethically obligated to guide that teacher and aid in any way possible to ease the transition into the next phase of professional life.

If, for example, a teacher wished to continue in research, s/he could negotiate for mini-grants to continue to work on his or her own. A teacher might also retain ties with a study as a long-term consultant after returning to the classroom full time, as several of IRT's former co-investigators have done. Another, very important way for teachers to continue direct participation is in the area of research dissemination and application. Teachers who have participated directly in a study are by far the best candidates for undertaking the important tasks of disseminating and/or applying that research in classrooms. Possible outlets for co-investigators in these areas are

described in Section 4.¹⁰

A continued relationship with the research center or university should not be a co-investigator's only option, however. There are many potential opportunities within the practicing community. One possible outlet for the research skills acquired by teacher co-investigators is expanded roles within the school district. Former co-investigators could fill new roles and responsibilities in schools, such as conducting workshops for other teachers, acting as research resource persons, and training other teachers to collaborate as co-investigators. As resident researchers, these former collaborators could offer support and advice to teachers who wish to engage in research in their own classrooms. The need for these support-type positions has been recognized by many, including Anthony Polemeni, director of New York City's Office of Educational Evaluation. Says Polemeni (1976):

One of the most effective ways to get a job done is to hire someone to do it. . . . the time has arrived, that we should start paying people to establish this research and development scene in our American schools. . . . With assistance, the American teacher will engage in active research. What school does not need the service of a resident researcher whose job it would be to train teachers in the consumption and the production of research? (p. 497)

What better candidates for such a position than teachers who have gained research experience as co-investigators? It is the districts' responsibility to create such positions, using to the best advantage the human resources available. Again, the creation of such positions could be encouraged through union and contract negotiations. An example of collaborators returning to new positions created by the district is the IRT collaborator who returned to her school district and assumed responsibility for professional development for teachers in her district.

¹⁰ As mentioned in the Introduction, the four collaborative roles we have identified frequently overlap. Co-investigators, for example, receive excellent training for later participation in policy making and dissemination.

Teacher co-investigators could also use their experience and knowledge as members of teacher center policy boards, accreditation boards, and advisory councils. Experience in research and working with those outside practice is fine training for making well-grounded decisions.

Former co-investigators could also function as resident researchers and resource persons in the teacher centers. With teacher centers largely funded by the federal government, this would bring yet another branch of support for collaboration. Former collaborators might also be commissioned as consultants or collaborators by state departments of education. The Michigan Department of Education retains many teacher consultants, and one of IRT's co-investigators is presently involved in this way. Several other co-investigators have served on advisory panels for the National Institute of Education.

In discussing the co-investigator's future and possibilities for continued involvement, we must not overlook the fact that some co-investigators are anxious to return to the classroom full-time. These teachers should be as heartily encouraged as those who decide to continue research activity. Some members of the education community skeptically predict that most teachers will end up in a doctoral program as a result of their participation in research. While overstated, this is a valid concern. At IRT, four teachers returned to the classroom full-time after one year of co-investigation, two stayed for a second year, one is entering her third year of co-investigation, and only two left teaching to pursue an advanced degree at the university.

If, as some predict, a trend for teachers' continuing involvement outside the classroom is found, then perhaps there is a problem in the nature

of the teaching job. Perhaps the present teaching role does not allow teachers the time or opportunity they need for reflection and personal growth. Perhaps, as IRT's teachers indicate, the teaching role is too rigid and exclusive for even those who love full-time teaching. Teachers need other options and opportunities for personal and professional development opportunities to use acquired knowledge and experience in exploring with others ways to improve teaching. Direct participation in research and policy making alleviates some of the frustration and alienation that many of today's teachers feel. And with increased teacher satisfaction, increased teaching effectiveness and student learning should follow. Providing these opportunities for participation as a part of the regular teaching role could be the shared responsibility⁵ of school districts, teacher organizations, teacher centers, and all groups within the education community.

II. Teachers Collaborating as Research Subjects

The broadest generalization that can be made about this role is that teachers who collaborate as research subjects are the primary source of research data -- not as guinea pigs, but as thoughtful, reflective individuals who have a great deal of practical knowledge and wisdom to share with researchers. The subject role is unique in that it is the only collaborative role that will ever be played by the majority of teachers. (Co-investigators, on the other hand, often become disseminators or policy makers and vice versa.)

Participation in this role ranges from simply responding to a survey questionnaire to being the subject of an intense ethnographic study. IRT research involves teachers responding to questionnaires and other survey instruments, keeping teacher logs, being interviewed and/or observed, being videotaped in their classrooms, sharing thoughts in response to taped excerpts of their teaching (stimulated recall), participating in ethnographic studies,

responding to a variety of instruments and simulation vignettes, and evaluating research findings.

Teachers as research subjects at the IRT are more than just a source of data, however. Even at this level, there is a chance for valuable interaction between teacher and researcher as teachers reflect and share knowledge of their practices. In an ethnographic study, for example, the teacher subject helps decide what is to be studied; here, the study design is very fluid and is altered by the subject's attitudes and behaviors. Another example of the highly valued interaction between researchers and teacher subjects is an IRT study of teachers' thinking processes in the teaching of mathematics. One teacher subject became so interested in the research that she applied for and acquired a role as co-investigator. Her interest resulted from a satisfying interaction with the researcher; though a subject of the inquiry, she was a *consultant* and *true collaborator* in the research. Setting is a key factor in this role, distinguishing it from the other collaborative roles. Participation as a research subject takes place primarily in a classroom or school setting, and in this sense it places limits on the opportunities for continuing dialogue with the researcher.

Further, a teacher in the subject role is typically sought after, or discovered by the researcher, whereas co-investigators and other types of collaborators are largely self-selected; they volunteer to participate, though it is obvious that teachers asked to participate as subjects must give their consent. Teacher subjects are interested mainly in their own teaching and classroom performance and how it compares with other teachers. (Co-investigators, on the other hand, generally express some concern for improving practice in a more general sense.) In view of this, researchers have a responsibility and obligation, whenever possible, to see that cooperation

in research leaves each subject with some thoughts and means for improving their own particular practices.

Participating in one of the more "traditional" research roles, the teacher collaborating as research subject needs little if any preparation to play this role (with the possible exception of intervention studies, where participating teachers might be taught new instructional strategies). A teacher's primary responsibility in participating as research subject is to continue doing what s/he normally does in the classroom. Honesty in one's response is important above all else. A study will inevitably suffer if teacher subjects act in a way they think researchers want them to act or who only say things they think researchers want to hear.

An example of this "pleasing the researcher" syndrome occurred during the first year of data collecting in IRT's Classroom Strategy Study. Researchers in this study are observing and interviewing teachers on their strategies for handling children with particular sorts of problems. All of the participating teachers were nominated by their principals as average or above in handling these children. One teacher, however, uncertain of her own abilities or perhaps fearing that she was being judged, rushed to the library the day before she was scheduled to be interviewed and read all she could find on current theories and models of classroom management. Thus, instead of sharing with researchers her own ideas and wisdom based on real experience, she simply repeated the information she obtained in textbooks. She gave up a valuable chance to pass her own personal knowledge on to others.

As far as number of subjects in a study, duration of participation, personal qualities sought, and selection procedures, these are all things that are determined by the particular inquiry; they vary from study to study. One procedure for selecting subjects currently employed by the Institute's

Content Determinants Research Group involves local teacher centers. With this procedure, researchers decide the schools in which they want to conduct research, then contact the local teacher centers. The centers, in turn, find willing participants who meet research specifications and secure the necessary permission from the school districts. This is a prime example of cooperation among different segments of the education community for the purpose of research and improved practice.

It is difficult to establish policy concerning the subject role because many of the role's features must be negotiated with each individual study. There are, however, certain responsibilities that must be undertaken by researchers enlisting the aid of teachers as subjects. Most importantly, researchers must insure teachers that their participation as subjects is a valuable experience that leaves them with some thoughts and means for improving their teaching.

How Can Teachers Decide Whether or Not to Participate?

With limited time available, teachers have to decide whether they can participate as research subjects and which studies are most worthwhile. There are several ways researchers can help teachers make a decision about the validity of the research and the value of their participation, including:

1. Providing a description or abstract of the study and stating its purpose. Researchers owe teachers clarity of information, and teacher subjects should understand the intent and purpose of the research they are expected to undertake. This abstract should briefly explain the research method to be employed, eliminating any "mysticism" for teachers. Mysticism or obscurity contributes to teacher alienation concerning research; teachers either reject a study outright because they don't understand it, or they naively defer to it without giving it careful consideration.
2. Describing for teachers previous pilot studies. Potential subjects should be informed that the study in which they are expected to participate has been piloted with teachers similar to themselves. They should also be informed that interview techniques, survey questionnaires, and other instruments have been revised to eliminate offensive or unclear questions on the basis of the pilot.

3. Providing subjects with a statement that teachers collaborated as co-investigators in planning the study and designing the instruments. This statement assures teachers that the researchers have made every effort to provide them with questionnaire instruments, and study procedures that are informative and will give them a chance to learn and reflect. (Presumably, teacher co-investigators who help design a study and its instruments will make certain that the study solicits information teachers are willing and able to offer.)
4. Presenting the actual signatures of the teachers who have collaborated as co-investigators on the study. By signing a study instrument or report, teacher co-investigators indicate that they have shared a partnership in that study. Thus, the actual signatures should indicate to potential subjects that the study in question is not just another example of tokenism, where researchers say they "involve" teachers.

Ideally, each study would be able to incorporate all four of these methods for helping teachers evaluate the validity and worthiness of the research. If not, then researchers should use as many methods as are applicable.

In addition, teachers have to be convinced that participation in research is an opportunity for serious thought and reflection. Many teachers feel that research is unimportant in their lives. This attitude is based upon experiences in which researchers came into their classrooms to observe, then went away, never to be heard of again. Implicit here is the notion of the "broken treaty." Some researchers have earned a bad reputation for all by taking advantage of the cordiality and cooperation of schools and teachers without offering them anything in return. At the very least teacher subjects should receive a copy of the study's final report and any other documents that may be of interest. Classroom videotapes and other research tools should also be accessible to teachers to provide them with opportunities for studying and evaluating their own practice. As with participation as a co-investigator, participation as a research subject should also be a growing experience for teachers.

III. Teachers Collaborating in Policy Making

Teachers who collaborate in policy making concerning educational research have a direct voice in administrative decisions that affect such factors as program priorities, fiscal practices, and operational policies. Teachers have collaborated in policy making at IRT by participating as voting members of the IRT Directorate and members of advisory committees to the co-directors, such as the committees that evaluated each proposed study. On a 13-member IRT Directorate, four members are teachers -- two teacher co-investigators and two teachers representing the Michigan Education Association and the Michigan Federation of Teachers. (Also included are school administrators, IRT researchers, non-IRT researchers, and a state department representative.)

IRT's teacher collaborators have direct input into policy and decisions concerning research priorities, formal and informal communications and negotiations with school districts and teacher subjects, dissemination of IRT products and information, pursuance of additional funding efforts, hiring of new personnel, and budget allocations, including salaries for teacher collaborators. Three teachers, for example, participated on a special-member pay board to determine salary levels for the teachers collaborating as subjects.

In What Settings Should Teachers Participate in Policy Making?

Since educational research in all forms and levels is intended to benefit students, teachers should participate in policy and priority setting for such research. Teacher participation could range from a group of teachers aiding their school district in deciding what research should be undertaken or commissioned to teachers collaborating with the state departments of education or the National Institute of Education. In between those extremes are teachers participating in policy making at the research center, university, or teacher center.

What can Teachers Contribute to Policy Making?

Perhaps the most important role that a teacher can play in policy making is that of questioner or challenger. As the ultimate recipients of research, teachers must take seriously their role as critic and judge. They must study carefully materials sent in advance so they bring to policy making not only serious critical thought, but questions needed for full understanding of the plans. In this way, they can directly share their practical wisdom and teacher perspective.

Policy makers have to be able to justify the research priorities and plans they establish. Here again, the teacher collaborator has to be articulate and assertive, not intimidated by university types. At the very least, they must be prepared to ask a lot of questions about proposed studies, making sure they can assess research validity, and offer their knowledge and experience in reviewing proposed or current studies and initiating new ones.

Teacher policy makers must also have a broad view of the problems facing teachers. They must have a commitment to teaching as a profession and be informed about the issues and concerns beyond their immediate classroom or school. At a recent meeting of the IRT Directorate, proposals for the next three years of research were being reviewed when one teacher raised a difficult question: Where in the proposals was the research dealing with student affect? The fact was that research on affective outcomes (attitudes, emotions, feelings) -- identified earlier by teachers as one of their greatest concerns -- had received lower priority in favor of other studies. But the teachers persisted. They believed that student affect was a concern of all teachers and should not be ignored. They succeeded in having the proposed scope of work revised to include research in this area. Here, teacher policy makers were serving, as they saw it, the interests and concerns of all teachers.

Policy makers also have a responsibility to make informed, well-grounded decisions. This involves conscientious reading of materials prepared for the policy makers and a close watch on activities and studies in progress. IRT Directorate members are responsible for reading research progress reports as well as frequent updates of the various projects found in the Institute's weekly newsletter. Directorate members also receive copies of each new IRT publication. While a conscientious effort on the policy maker's part is necessary, there are certain steps that can be undertaken to prepare teachers for policy working.

What Preparation is Necessary for Policy Making?

The teacher who is somewhat knowledgeable about educational research before entering policy making is obviously at an advantage; but research knowledge or expertise is not a prerequisite to policy making. Any expertise or knowledge required can be developed through the efforts of the research center or agency to provide the necessary background information. We suggest, for example, that an information seminar explaining the institution's philosophy, purposes, and past efforts be a part of every new policy maker's training, teachers as well as others. We also recommend that the research center or university make available to teachers select magazines and journal subscriptions, directing their attention to relevant articles that could help in decision making. Another possibility is to conduct periodic workshops in which the policy makers would have an opportunity to function as initiators as well as reactors. Workshop discussions might lead to new research initiatives, priorities, and funding possibilities.

In policy-making meetings, teachers should insist on further clarification of references to scholars or other studies they do not thoroughly understand. Again, policy makers are successful only if they are assertive.

Policy makers, like other collaborators (both teachers and researchers) must have the art of effective communication. Researchers can inform teachers of the general cannons of research and objective inquiry, while teachers can inform researchers of the practical considerations. In policy making as in all collaborative roles, teachers and researchers must gain an understanding of each other's expertise. Researchers can determine what is feasible in terms of systematic study, but teachers know what is feasible and reasonable in the world of practice. Together, they make a good team.

Giving Teachers Time to Make Policy

There is a great volume of work for teachers participating in policy making at the IRT. Lengthy progress reports and preparatory materials must be read before each Directorate meeting. This, in addition to regular full-time responsibilities, has left IRT's policy makers pressed for time. The problem cannot be remedied by taking teachers away from their teaching responsibilities and hiring them as full-time policy makers, however. Once removed from the ranks, these teachers would probably be viewed by the rest of the teacher constituency as unreliable representatives. The answer here is to make collaboration in policy making a regular feature of the teaching job in the same manner we proposed for co-investigators. The teaching job must be expanded to include participation in the various phases of collaboration, which include policy making. Teacher time in policy making could be compensated by the institution or university, but school districts must cooperate in providing release time.

Representing the General Constituency as Well as Special Interests

In policy making, a distinction must be made between perspective and self interest. It is important for both the teacher's perspective and the pro-

professional organizations' self interest to be represented in policy making. The union representatives on IRT's Directorate have a dual bias -- a teacher bias and an organizational bias. These teachers, as union officers, also have more power and authority with other teacher members than would full-time union staff members, who are hired to work for the teachers. The teacher collaborators all agree that union staff members should not be setting policy, but they do suggest that it would be advisable to gain the thoughts and perspectives of union staff members by including them as non-voting members of a policy board.

The interests represented by members of a policy-making group must be made clear. If a board member is needed to reflect organizational (NEA, AFT) concerns, for example, that need must be clearly stated and understood. An organization representative cannot just be someone who happens to be a member of the organization; representatives have to be concerned for the interests of the organization, just as other representatives must be concerned for the groups they represent.

Teacher policy makers should represent not only the general constituency, but also specific constituencies relevant to the research in question; for example, organizations concerned with specific subject matter, like the Elementary Reading Association. For acquiring perspectives from these groups in policy making, the IRT has organized a network of advisory boards. Each board is associated with a specific project or research area and composed of individuals (practitioners and researchers) with expertise and interest in those areas. The IRT Directorate was largely responsible for nominating individuals to these advisory boards.

IV. Teachers Collaborating in Research Dissemination and Application

The goal of IRT research and educational research in general is the successful dissemination, application, and response to that research from

classroom teachers. Traditionally, research application and dissemination has been a linear process, with researchers as producers and teachers and teacher educators as intended consumers. But dissemination is not a one-way street; there has to be a flow of information both ways. Teachers and teacher educators must learn about a study and how to use its findings in their classrooms, but researchers must know the results of classroom applications, what problems were encountered, and what additional or alternative research might be necessary. Application is one aspect of dissemination, but we are treating it separately here to emphasize this two-way process.

The dissemination/application role overlaps considerably with other roles. Basically there are two levels of teacher participation in this role; teachers can be involved in the dissemination of research findings and results to other teachers, and/or teachers can aid in the testing and application of research. The dissemination role is distinct from the first three teacher collaborator roles discussed in this paper in that it is the only role with prerequisite experience in research. Effective participation in research dissemination will most often depend on previous participation in co-investigation. Teachers who worked on a study would be most familiar with that research and the most likely candidates for telling others about it. The dissemination of research, then, is a natural outlet for the skills and experience teachers have gained as co-investigators. In research application, teacher collaborators implement the research findings and results in their classrooms. They note problems, failures, and successes with the applications, providing researchers with valuable feedback.

Integral to our discussion of teachers' roles in dissemination is a consideration of the process itself. How can dissemination best be handled? What are the most effective vehicles for the dissemination of valid findings

to teachers? Judging from the present gap between research and practice, these are questions as yet unanswered.

Two conditions must be met for effective dissemination to occur. First, the information and/or products being disseminated must be something teachers want in the first place. The product must be matched with the need, which is where the teacher co-investigator fits into the picture. Secondly, the information and knowledge produced through research must be translated to teachers. The key to any successful dissemination effort is targeting the audience, then providing the information in a manner that appears to that audience. One of the primary roles of teachers and teacher educators who collaborate in research dissemination is *translating* research knowledge and sharing that knowledge with other teachers. Teachers who participate as co-investigators have an intimate knowledge of the research and should be able to act as translators and interpreters of this research for other teachers. As disseminators, teacher collaborators become teacher educators, speaking to, consulting with, and writing for other teachers. They can also become curriculum developers, consultants to developers, and policy makers.

The teacher's role in dissemination and application is just emerging at IRT. This aspect of collaboration has not yet occurred frequently because the research activity is young, but we can imagine many avenues this role might take.

The dissemination model discussed most frequently at the Institute is one developed by Everett Rogers (1962). This five-step model includes the following levels: awareness, interest, evaluation, trial, and adoption. Plans are under way at IRT to involve teachers at each one of these levels, as we will discuss in the following pages.

Creating Awareness and Interest Through Mass Media

Before teachers can put research into practice they must be aware of and interested in that research. One way to create this awareness and interest is through the medium of print. The publication of research information in scholarly journals is the current trend in research (as encouraged by the university reward system), but journals and research reports are not the most appropriate tools to use for reaching teachers. Here, the help of teacher collaborators is important in determining the types of information to disseminate to specific teacher audiences. Once the audience is targeted (elementary reading teachers, for example), teacher collaborators can translate and interpret this information for teachers' magazines and publications. One teacher collaborator working with IRT's External Factors group is currently writing an article on that group's analysis of standardized math tests. She plans to submit the article to various math publications for teachers.

Another mechanism for using the print medium in reaching teachers is a monograph series for teachers based on specific topics of interest to practitioners. Such a series is currently planned at IRT. In this proposed series, major research monographs prepared for the research community would be rewritten to include only those facts and findings relevant to teachers. Obviously, successful implementation of this plan requires the collaboration of teachers.

One former IRT collaborator has proposed starting a district or school newsletter in which teachers would share the ideas and knowledge they had gained from various research experiences.

The television and audio-visual media are other vehicles by which teachers collaborating in dissemination can reach other teachers. Collaborators at IRT have developed slide/tape presentations on various studies. These presentations are taken to school districts and conferences and shown

to Institute visitors. Teachers are also helping to develop a videotape series planned for public television. In addition, teachers have represented the IRT in radio interviews.

Collaborators as Research Ambassadors

Personal contact and oral communication are other means of disseminating research information. Teachers can present papers or talk about their research involvement at conferences or in special meetings. Several IRT collaborators have participated as invited discussants on national conference panels. Teachers are perhaps most effective at professional organization meetings, where they present research information as rank-and-file members of the group.

Oral communication becomes a two-way process when teachers conduct seminars and colloquia for researchers, presenting to them information about schools and practitioners. One IRT co-investigator, for example, conducted a two-year investigation of the effects of collaboration upon teachers. She presented her findings to researchers in various forms, including colloquia, conference discussions, and written reports. Seminars or colloquia are vehicles collaborators could use when reporting the results of applying research findings in their classrooms.

Teachers can also tell other teachers and school personnel about their own individual involvement in research. This one-to-one dissemination, where a teacher shares knowledge and insights with a small group of peers, is a very natural form of communication. Evidence suggests that the most common dissemination mode in teaching is peer interaction (Rogers, 1962) -- the situation of a teacher talking to another teacher down the hall. This happens far more often than teachers talking to a product developer or a researcher. Indeed, IRT's collaborators conduct "crusades" in their own

schools, relating their experiences to colleagues and bringing back to IRT the names of teachers interested in additional information. We are not suggesting that this is the most effective mode of dissemination, but because it is practiced so frequently, it should not be ignored. Information flows from teacher to teacher, so this is certainly one way in which dissemination efforts should be directed.

To this end, teacher co-investigators who return to their school districts (as resource persons or otherwise) could collaborate in dissemination as the initiators and sources of this flow. There are communications networks in schools the same way there are natural networks in any social setting. Dissemination efforts could seek to attract those teachers interested in research as a means of improving practice; they, in turn, will share their knowledge and experience. Workshops or informal talk sessions planned and conducted by collaborators are ways to feed communications networks. Ideally, the information would flow two ways in a system of lateral exchange -- teachers taking the knowledge and information they receive from the research center to other teachers, then taking the comments and suggestions they receive from the teachers back to the researchers. At this point, the cyclic nature of collaboration is most obvious; as co-investigators and policy makers, teachers help set research priorities and identify studies. The studies are then carried out with the aid of subjects and co-investigators. As disseminators, teachers take the research into the classroom, they come back to researchers with problems of application and additional areas for research. And the collaboration process continues.

This informal, yet effective mode of one-to-one dissemination could be practiced by a teacher co-investigator who has returned to the classroom and conducts workshops within the school, a collaborator in the role of school or district resource person, or a teacher collaborator who becomes

a staff member or resource person in a teacher center. On a one-to-one basis these collaborators as "resource" persons could aid their colleagues in the undertaking of classroom research and provide guidance for teachers implementing research results.

Disseminating Information about Processes as Well as Products

The term "dissemination" implies that research findings are a list of propositions written into prescriptions for teachers. This is not always the case. It is just as important to communicate new knowledge and information about the research process itself as to disseminate prescriptions. Too often, teachers and the general public have had unrealistic expectations because they had no knowledge of the research process. A large task in dissemination, therefore, is to eliminate the misconceptions and present the realities of research. Educational research does not produce immediate results; it is a long, laborious process that is sometimes unsuccessful. Teachers who have collaborated as co-investigators themselves are in an excellent position to communicate this information to their colleagues in the classroom. Teacher collaborators can help to cultivate in teachers and the general public an appreciation and understanding of the research process.

Providing Opportunities, Not Just Information

Research should give teachers opportunities and educative experiences in addition to products and information. The dissemination of educational research should not only allow teachers to improve their teaching performance, but should also provide them with the opportunity to grow professionally and intellectually. The activity of involving teachers as co-investigators in the planning, data collecting, and analysis of research, for example, is providing them with an educative experience.

While co-investigation is an educative experience for some teachers, there is a limit to the number of teachers that can be involved in such an experience. One way to provide this type of experience for large numbers of teachers might be to conduct summer institutes. At such institutes, teachers could learn that their concerns are researchable problems, and they could be shown how they might conduct research in their own classrooms. Teacher co-investigators could function as teacher educators in such institutes, relating their own knowledge and experience with those who attend. Many of these ideas are yet to be tried.

Concluding Remarks

Despite individual variations in collaborative relationships, several facts emerge. Collaborative roles and responsibilities will differ according to the nature and stage of research. Also, with increased teacher involvement comes increased responsibility. Teacher collaborators will have to take both the credit and the criticism for the research in which they are involved.

Another certainty is that the responsibility of supporting collaboration both financially and philosophically -- must fall on the shoulders of all groups within the educational community. This includes support from school districts, teachers, universities, state departments, research centers, teacher organizations, and the federal government. School districts could cooperate in giving teachers the time and option to participate in research, arranging schedules and team teaching to accommodate such participation. The districts could also create special positions -- such as resident researcher or resource person -- for collaborators to fill when returning to the school. Teachers and teacher organizations could negotiate for the co-operation of school districts in collaborative research by seeking

collaborative roles as a regular feature of an expanding professional role for teachers. The professional organizations could also strive to cultivate in their members an appreciation and understanding of research and a desire to become involved as research collaborators. The state and federal government could financially support R&D centers and universities that hire teacher collaborators, and teacher centers where collaborators are recruited and trained for the diverse roles described. Universities and research centers, in turn, can recognize the benefits of collaborative research and make efforts to initiate and sustain such research activity and collaboration.

In the research collaboration described in this paper, the idea of the two camps -- teachers and researchers -- still exists, and this is as it should be. Collaborative research should not seek to make teachers and researchers alike. Each makes a necessary and unique contribution to the inquiry process. Teachers, with their classroom experience and knowledge, help direct the research to more critical questions important to the improvement of practice; researchers help focus and translate these questions into research problems that lend themselves to social science inquiry. Collaboration does involve, however, a conscious effort on both sides to make it work. Teachers and researchers must develop an understanding and appreciation for each others' unique sets of knowledge and expertise and the particular contributions each can make. Only through understanding and cooperation can teachers and researchers hope to carry out research that will be relevant and useful in improving teaching and learning.

We would stress here that teacher collaboration in educational research is more than just improving the research and its outcomes. Teacher involvement in research greatly expands the teacher role and opens many new avenues for professional growth and development. With increased role

opportunities, a direct voice in the decisions and research likely to affect them, and greater job satisfaction, improved performance is likely to follow. It is time to start viewing teaching in a broader professional context, time to stop seeing teachers as persons only fit to interact with children or as the guinea pigs of educational research. Experienced teachers have developed effective strategies and implicit theories about teaching and learning; researchers would do well to tap this knowledge and enlist the aid of teachers in conducting research.

Implicit in much of our discussion are the ethical problems and issues that arise when teachers and researchers form collaborative teams. A research center or university counseling its teacher collaborators on future undertakings, a researcher providing subjects with the results and feedback of a study, teacher co-investigators asserting their opinions, subjects behaving in an authentic manner, teacher policy-makers taking time to gather background information to make informed decisions -- these are examples of ethical considerations in collaborations. The ethical considerations are numerous and so yet, largely unaddressed. We recommend, therefore, that the ethical obligations of both researchers and teachers be the focus of another conference or series of deliberations.

Obviously, not all the issues and questions concerning teacher collaboration could be addressed during the conference or in this paper, and in attempting to answer one question we often raised two more. Our final recommendation, therefore, is that teachers, researchers, administrators, and other members of the educational community continue to debate the issue, suggesting approaches to effective collaboration, then testing them out. While these deliberations occur, however, it is important to be practicing collaboration as well as discussing it.

We cannot expect to make institutional changes overnight, but neither can we just sit back and expect the process to evolve on its own. Perhaps the largest task ahead is educating educators as to the necessity and value of practitioners collaborating in educational research. Teachers with an interest in research and in sharing their teaching knowledge and experience with others have to have an outlet for their interests, just as the research needs those teachers to help validate and improve studies. By increasing opportunities for effective and sustained collaboration between teachers and researchers, we will be working toward improving teaching, teacher education, and learning.

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Appendix

IRT Conference on

TEACHER COLLABORATION IN EDUCATION RESEARCH

February 10, 1978

Invited Participants

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IRT Teacher Collaborator
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IRT Researcher

Patrick Daly
American Federation of Teachers

Sharon Feiman
IRT Researcher

Susan Florio
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Joyce Herron
IRT Teacher Collaborator
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Robert Hill
IRT Teacher Collaborator
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Charlette Kennedy
IRT Teacher Collaborator
Eaton Rapids Public Schools

Lucy Knappen
IRT Teacher Collaborator
Lansing Public Schools

Margaret Knispel
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Member of Birmingham School District
School Board and IRT Intern

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